WHAT IS CLAIMED IS:

1. A method for reconstructing a path taken by undesirable network traffic through a computer network from a source of the traffic, the method comprising:

collecting statistics at a plurality of measurement points located within forwarding infrastructure of the computer network; and

analyzing the statistics to reconstruct the path taken by the undesirable network traffic through the network from the source of the traffic.

2. The method as claimed in claim 1 further comprising blocking undesirable network traffic within the computer network upstream of the points based on the reconstructed path.

3. The method as claimed in claim 1 wherein the forwarding infrastructure includes at least one router.

4. The method as claimed in claim 1 wherein the statistics include flow-based statistics which provide information related to the same logical traffic flow.

5. The method as claimed in claim 1 wherein the statistics include packet statistics which provide information about a set of packets entering the forwarding infrastructure.

6. The method as claimed in claim 1 further comprising requesting and receiving upstream statistics from forwarding infrastructure of the computer network upstream the measurement points and wherein the step of analyzing includes the step of analyzing the upstream statistics to reconstruct the path taken by the undesirable network traffic.

7. The method as claimed in claim 1 wherein the step of analyzing includes the step of extracting profiles from the statistics collected at the

plurality of measurement points and comparing the profiles to reconstruct the path taken by the undesirable network traffic.

8. The method as claimed in claim 1 wherein the computer network is the Internet.

9. A system for reconstructing a path taken by undesirable network traffic through a computer network from a source of the traffic, the system comprising:

collectors for collecting statistics at a plurality of measurement points located within forwarding infrastructure of the computer network; and

at least one controller in communication with the collectors for analyzing the statistics to reconstruct the path taken by the undesirable network traffic through the network from the source of the traffic.

10. The system as claimed in claim 9 further comprising means in communication with the at least one controller for blocking undesirable network traffic within the computer network upstream of the points based on the reconstructed path.

11. The system as claimed in claim 9 wherein the forwarding infrastructure includes at least one router.

12. The system as claimed in claim 9 wherein the statistics include flow-based statistics which provide information related to the same logical traffic flow.

13. The system as claimed in claim 9 wherein the statistics include packet statistics which provide information about a set of packets entering the forwarding infrastructure.

14. The system as claimed in claim 9 further comprising means for requesting and receiving upstream statistics from forwarding infrastructure of

the computer network upstream the measurement points and wherein the at least one controller analyzes the upstream statistics to reconstruct the path taken by the undesirable network traffic.

15. The system as claimed in claim 9 wherein the controller extracts profiles from the statistics collected at the plurality of measurement points and compares the profiles to reconstruct the path taken by the undesirable network traffic.

16. The system as claimed in claim 9 wherein the computer network is the Internet.

17. The method as claimed in claim 1 wherein the undesirable network traffic includes denial of service attacks.

18. The method as claimed in claim 17 wherein the computer network includes a plurality of service provider networks.

19. The system as claimed in claim 9 wherein the undesirable network traffic includes denial of service attacks.

20. The system as claimed in claim 19 wherein the computer network includes a plurality of service provider networks.